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APPLICANT : HITACHI LTD;

INVENTOR : MORIYA SHIGEO;

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TITLE : DIE MATERIAL FOR PLASTIC MOLDING AND ITS MANUFACTURE

ABSTRACT : PURPOSE: To obtain a mold material for plastic molding having high thermal conductivity and effective for improving productivity by subjecting a melted copper alloy contg. specified weight ratios of Cu, Ni, Si, Al, Zr and Ti to hot forging, solid soln. treatment and aging treatment.

CONSTITUTION: A melted copper alloy contg., by weight, 3 to 6% Ni, 0.6 to 1.5% Si and 0.5 to 2% Al, furthermore contg. at least either 0.03 to 0.5% Zr and 0.1 to 0.5% Ti and the balance substantial Cu is prep'd. Then, this copper alloy is subjected to hot forging at 670 to 890°C at ≥ 4 forging ratio, is thereafter held to 850 to 950°C, is subjected to solid soln. treatment, is cooled to 500°C at $\geq 5^\circ\text{C/sec}$ cooling rate and is thereafter subjected to aging treatment at 450 to 550°C to obtain a mold material for plastic molding. By using this material, the temp. raising and cooling of a mold are accelerated, and the time from its closing to opening can be shortened.

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